

J. J. CRAWFORD.
Screw-Presses.

No. 158,685.

Patented Jan. 12, 1875.

FIG. 1.

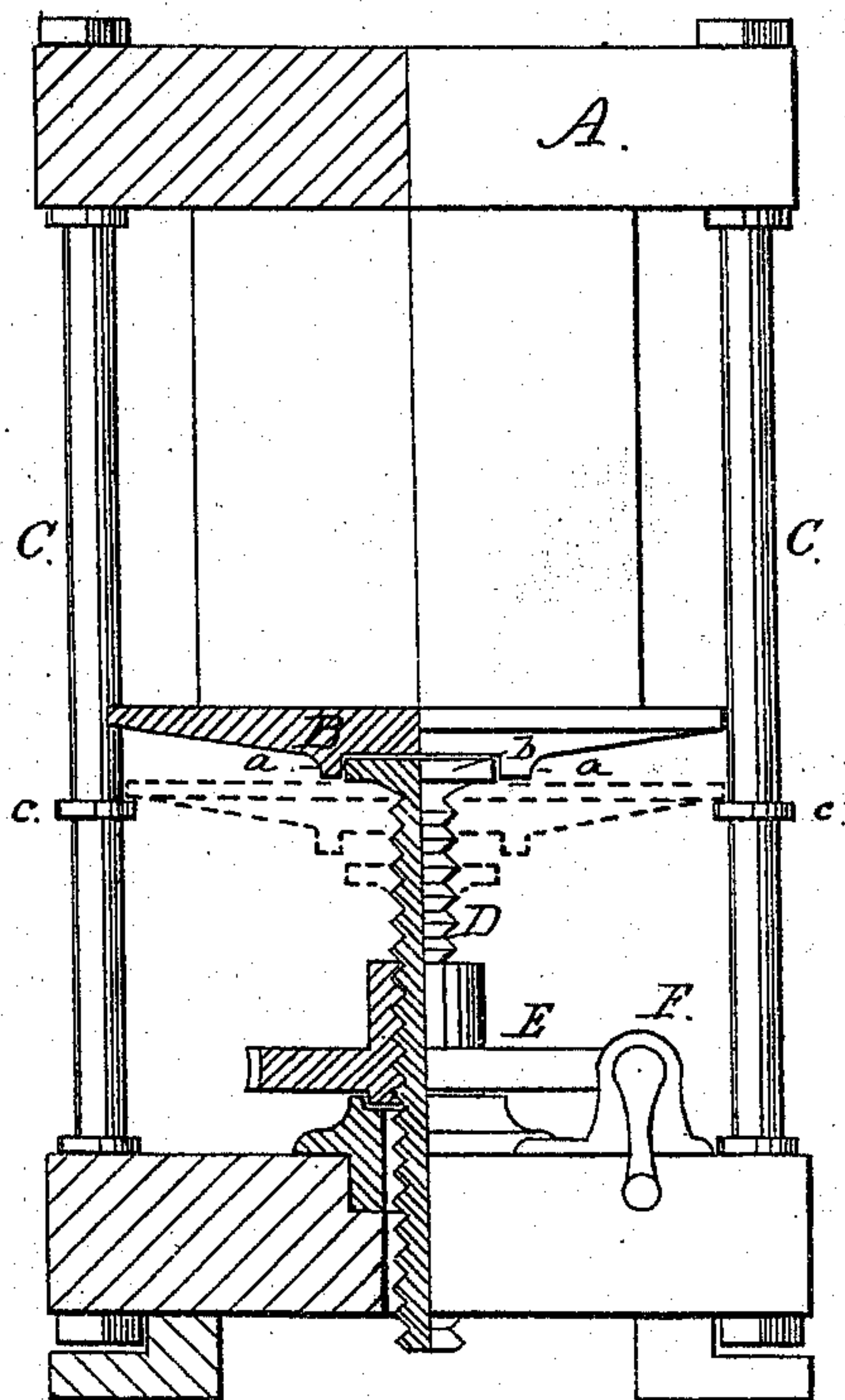
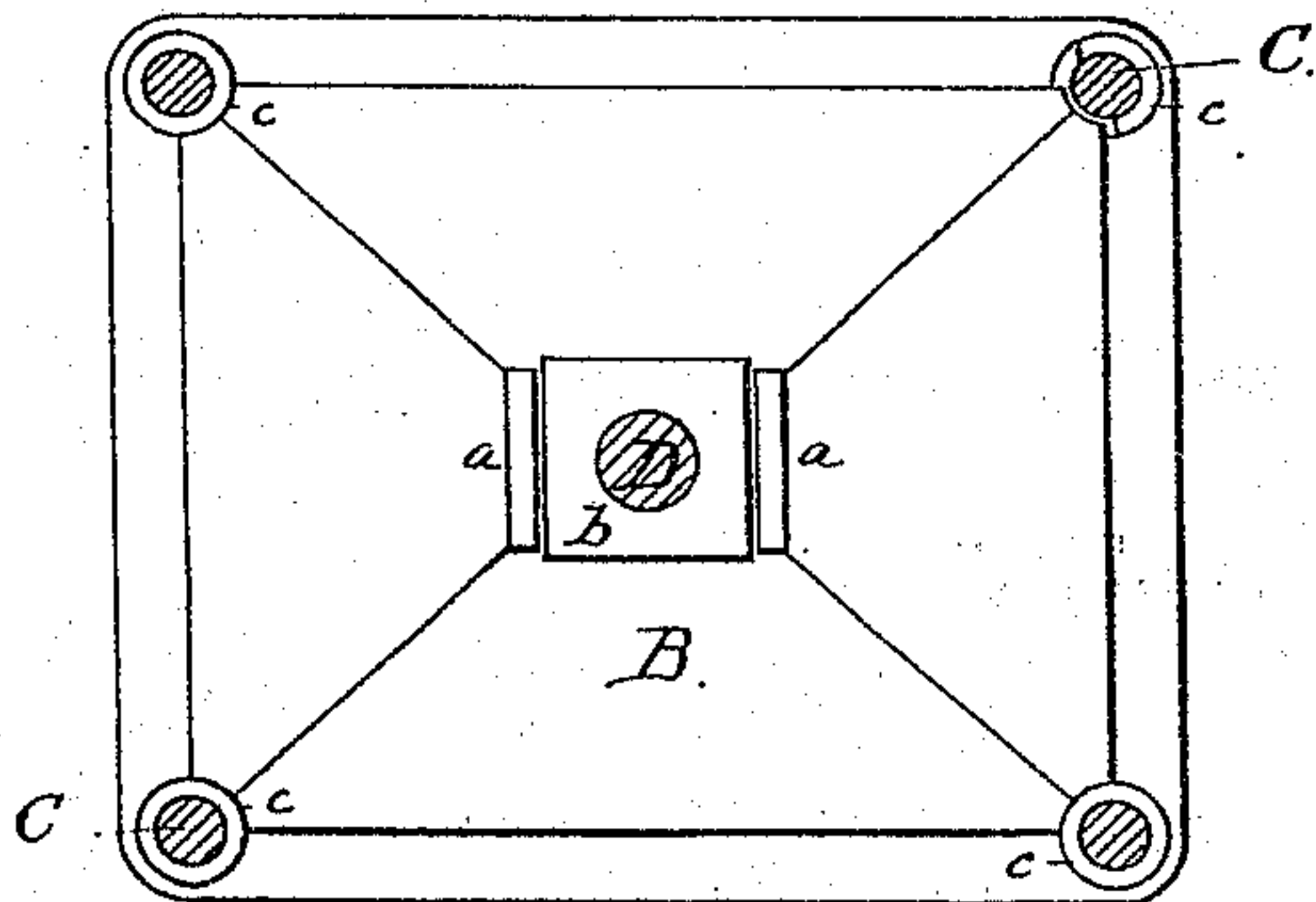


FIG. 2.



WITNESSES.

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JOHN J. CRAWFORD, OF NASHUA, NEW HAMPSHIRE.

IMPROVEMENT IN SCREW-PRESSES.

Specification forming part of Letters Patent No. 158,685, dated January 12, 1875; application filed July 15, 1874.

To all whom it may concern:

Be it known that I, JOHN J. CRAWFORD, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented an Improvement on Screw-Presses, of which the following is a specification:

This invention relates to screw-presses in which the pressure is transmitted to the goods, &c., through a platen that is raised and lowered by the upward and downward travel of a screw-shaft through a revolving screw-nut, the screw-shaft being automatically freed from the under side of the platen when the latter is arrested in its downward movement. The invention particularly relates to the attachment or connection between the screw-shaft and the platen; and this improved attachment consists of an interlock between the screw-shaft and the platen, which is constructed so that the screw-shaft can automatically free itself from the platen if the platen be arrested in its downward movement, and the turning of the screw-nut be then continued, which frees the screw-shaft from its connection with the platen, and allows the screw to turn with the screw-nut, as hereinafter explained.

This improved connection is illustrated in the accompanying plate of drawings, in which Figure 1 is a part elevation and a part vertical section of a screw-press having my improved connection between the screw-shaft and platen; and Fig. 2 is a horizontal section along line *x x*, Fig. 1, with the under side of the movable platen in plan view.

In the drawings, A represents the upper or fixed head, and B the movable platen, of a screw-press. The head A and the movable platen B are arranged together, as ordinarily, and so that the platen can be moved in a direct line toward and away from the head for compressing the goods, &c., which may be placed on the platen between it and the head. C, the guide-posts for the platen B, and D the screw-shaft by which the platen is raised and lowered. This screw-shaft D is driven by the screw-nut E, which is arranged to be revolved by suitable gearing, such as shown at F, or otherwise when power is applied. *a a*, two parallel ribs on the under side of the platen B, and *b* a square head at upper end of screw-shaft. The head *b* of screw-shaft fits within

and between the parallel ribs *a a* of the platen, and, together with the ribs, interlocks the screw-shaft with the platen, and thus holding the shaft against turning with the screw-nut, causes it to travel in a direct upward and downward direction through the nut, according as the nut is turned in one or the other direction, whereby the platen is lifted in the one case and allowed to fall in the other. *c*, a collar on each guide-post. These collars *c* are all in the same horizontal plane, and by them the downward travel of the platen is limited—that is, the platen is prevented from passing below their horizontal plane.

In the use of the press herein described the screw-nut is revolved by applying power in any suitable manner, and according as the nut is turned in the one or the other direction, the platen is raised or lowered. In the lowering of the platen it comes to rest on the collars of the posts C, and after then, if the turning of the screw-nut be continued, the square head *b* of the shaft commences to pass out of its bearing within the ribs *a* of the platen, and so continues until it has entirely left or freed itself from them, when, as is obvious, it is free to turn with the nut, and, as a consequence, has no farther downward movement.

With my improved connection between the screw-shaft and platen herein described, as the screw automatically disengages itself from the platen, it is thus left free to turn with the nut however long the turning of the nut may be allowed to continue.

In lieu of the peculiar construction of parts herein described to interlock the screw-shaft in the platen, the same interlock may be secured in many ways, obviously, as for instance, by a relative arrangement on the shaft and platen of pins and sockets, or by providing the platen with a suitable-shaped recess to receive the square end of the screw-shaft, but in all the cases the interlocks must be of such form that if the platen be held against its downward movement the shaft can then travel and disengage itself from the platen under a continued revolution of the screw-nut.

As to the collars *c* for stopping the downward travel of the platen, they may be dispensed with and other obvious forms of stops substituted.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The screw-shaft D and movable platen B of a screw-press, connected together and constructed substantially as set forth, so that the screw-shaft will be automatically released and cease to operate the platen, as set forth.

2. The combination of the platen, having the parallel ribs on its under side, with the screw-shaft having a square head adapted to fit between said parallel ribs, substantially as de-

scribed, whereby the said screw-shaft, in its downward movement, is automatically released from the platen, as and for the purpose described.

The above specification of my invention signed by me this 10th day of July, A. D. 1874.

JOHN J. CRAWFORD.

Witnesses:

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